

WE CLAIM:

1. An intravenous catheter introducing device comprising:

a barrel having front and rear open ends opposite to each other in a longitudinal direction, and a surrounding barrel wall which interconnects and which is interposed between said front and rear open ends, said surrounding barrel wall including a front smaller-diameter wall portion and a rear larger-diameter wall portion which are opposite to each other in the longitudinal direction and which are proximate to said front and rear open ends, respectively, said surrounding barrel wall having an inner barrel wall surface which surrounds an axis in the longitudinal direction and which confines a passage that is communicated with said front and rear open ends, and an outer barrel wall surface opposite to said inner barrel wall surface in radial directions relative to the axis;

a needle cannula having a front segment terminating at a tip end, and a rear connecting end opposite to said front segment along the axis;

a needle hub including a front holding portion and a rear shell portion disposed opposite to each other along the axis, said rear shell portion being inserted into said passage from said rear open end, and being slidable relative to said surrounding barrel wall along the axis between front and rear positions to be proximate to said front open end and said rear open end, respectively, said front holding portion holding said rear connecting end of said needle cannula such that when said rear shell portion is in the front position, said needle cannula

is placed in a position of use, where said front segment extends forwardly of said front open end for ready use, and when said rear shell portion is in the rear position, said needle cannula is placed in a disposal position, where said front segment retreats into said passage, said rear shell portion surrounding the axis and defining a flashback chamber which is fluidly communicated with said needle cannula;

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a releasably retaining member which is disposed to arrest axial movement of said needle hub relative to said barrel when said rear shell portion is in the front position, and which includes

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a retaining hole formed in said outer barrel wall surface of said larger-diameter wall portion, and extending in a radial direction through said inner barrel wall surface, and

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an engaging peg disposed to extend in the radial direction, and engageable in said retaining hole to establish an interengagement between said larger-diameter wall portion and said rear shell portion such that movement of said rear shell portion at the front position is arrested;

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an actuator operable externally and disposed to enable said engaging peg to be disengaged from said retaining hole so as to permit the axial movement of said needle hub to the rear position;

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a catheter hub including a sleeve portion which is detachably sleeved relative to said front holding portion of said needle hub and which defines a duct along the axis, and a tip portion which is opposite to said sleeve portion along the axis, and which defines a through hole that is communicated with said duct along

the axis and that permits extension of said front segment therethrough; and

a tubular catheter having a proximate segment which is inserted into said through hole and which extends along the axis to be fluidly communicated with said duct, and a distal segment which extends from said proximate segment along the axis to extend forwardly of said tip portion so as to surround and sheathe said front segment of said needle cannula while permitting said tip end to project forwardly of said distal segment when said needle cannula is placed in the position of use.

2. The intravenous catheter introducing device of Claim 1, wherein said needle hub further includes an intermediate portion which interconnects said front holding portion and said rear shell portion to communicate said needle cannula with said flashback chamber and which is light transmissible to permit viewing of blood flowing therethrough.
3. The intravenous catheter introducing device of Claim 2, wherein said needle hub further includes an air-permeable member which is in engagement with said rear shell portion so as to close said flashback chamber.
4. The intravenous catheter introducing device of Claim 3, wherein said air-permeable member is made from a porous filter material.
5. The intravenous catheter introducing device of Claim 1, wherein said rear larger-diameter wall portion has an elongated guideway extending from said outer barrel wall surface through said inner barrel wall surface in the radial direction, and elongated from said retaining hole rearwardly and in the

longitudinal direction to terminate at a rear retaining end,
said engaging peg being disposed on and extending radially
from said rear shell portion to terminate at a shifted end which
extends radially and outwardly of said outer barrel wall surface,
and being slidable along said elongated guideway from said
retaining hole to said rear retaining end when said rear shell
portion of said needle hub slides from the front position to
the rear position,

said actuator being connected to said shifted end of said
engaging peg, and being disposed outwardly of and being slidable
relative to said outer barrel wall surface.

- 5 6. The intravenous catheter introducing device of Claim 5, wherein
said elongated guideway has front and rear constricted regions
which are formed immediately behind said retaining hole and
immediately in front of said rear retaining end, respectively,
such that once said engaging peg is forced through one of said
front and rear constricted regions, movement of said engaging
peg is arrested by virtue of a snap-fit in a corresponding one
of said retaining hole and said rear retaining end so as to
place said needle hub in a corresponding one of the front and
rear positions.
- 10 7. The intravenous catheter introducing device of Claim 6, wherein
said rear larger-diameter wall portion further has a split which
extends from said rear retaining end of said elongated guideway
to said rear open end.
- 15 8. The intravenous catheter introducing device of Claim 5, wherein
said retaining hole includes a proximate connecting end and

a distal retaining end which are opposite to each other in a transverse direction relative to the longitudinal direction and which are proximate to and distal from said elongated guideway, respectively, such that said engaging peg is engaged in said distal retaining end to arrest movement of said rear shell portion of said needle hub at the front position, and such that said actuator is operated to move said engaging peg from said distal retaining end to said proximate connecting end so as to permit slidable movement of said engaging peg along said elongated guideway.

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9. The intravenous catheter introducing device of Claim 8, further comprising a biasing member which is interposed between said rear shell portion and said inner barrel wall surface, and which is disposed to bias said needle hub toward the rear position.
10. The intravenous catheter introducing device of Claim 9, wherein said inner barrel wall surface of said larger-diameter wall portion and said rear shell portion respectively have an annular shoulder and a flange which are opposite to and which confront each other in the longitudinal direction so as to define a biasing member receiving space therebetween, said biasing member being a coiled spring which has front and rear spring ends abutting against said annular shoulder and said flange, respectively, such that said coiled spring is compressed by said needle hub when said rear shell portion is in the front position.
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11. The intravenous catheter introducing device of Claim 9, wherein said rear shell portion and said inner barrel wall surface of

said larger-diameter wall portion respectively have an annular flange and an edge which are opposite to and which confront each other in the longitudinal direction so as to define a biasing member receiving space therebetween, said biasing member being a coiled spring which has front and rear spring ends secured to said annular flange and said edge, respectively, such that said coiled spring is tensioned by said needle hub when said rear shell portion is in the front position.

5 12. The intravenous catheter introducing device of Claim 1, wherein

10 said actuator includes a triggering member which is pivotally mounted on said outer barrel wall surface at a fulcrum point, and which includes a weight end formed integrally with said engaging peg, and a power end disposed at an opposite side of said weight end relative to said fulcrum point so as to be actuated to move said engaging peg in the radial direction to withdraw said engaging peg from said passage,

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 said device further comprising a biasing member which is disposed between said rear shell portion and said inner barrel wall surface to bias said needle hub toward the rear position.

20 13. The intravenous catheter introducing device of Claim 1, wherein said front holding portion of said needle hub is received in said passage so as to be surrounded by said smaller-diameter wall portion, said sleeve portion of said catheter hub being detachably sleeved on said smaller-diameter wall portion.

25 14. The intravenous catheter introducing device of Claim 1, wherein said front holding portion and said rear shell portion of said needle hub are separated from each other, said needle hub

further including an interconnecting portion which is formed integrally with and which extends forwardly from said rear shell portion along the axis and which defines an axial passageway that extends therethrough and that is communicated with said 5 flashback chamber, and a sleeve portion which is integrally formed with and which extends rearwardly from said front holding portion along the axis and which is detachably sleeved on said interconnecting portion from said front open end of said barrel along the axis so as to fluidly communicate said needle cannula 10 with said flashback chamber,

said sleeve portion of said catheter hub being detachably sleeved on said front holding portion.